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 30 Tyr Glu Pro Leu Pro Glu Asp Ala Glu Lys Thr Ser Asn Ala Asp Val
 50 55 60

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5 Ala Val Ser Asp Gly Ile Asp Val Ile Tyr Leu Glu Gly Ala Ser Glu
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Glu Lys Leu Asp Lys Glu Ala Lys Ser Lys Phe Asp Ala Ile Ala Glu
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Lys Ala Tyr Gly Val Pro Ser Ala Tyr Ile Trp Glu Ile Asn Thr Glu
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Glu Glu Gly Thr Pro Asp Gln Ile Ser Ser Leu Ile Glu Lys Leu Lys
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Val Ile Lys Pro Ser Ala Leu Phe Val Glu Ser Ser Val Asp Arg Arg
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Pro Met Glu Thr Val Ser Lys Asp Ser Gly Ile Pro Ile Tyr Ser Glu
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<212> DNA

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5 <223> Description of Artificial Sequence: PCR primer

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<213> Artificial Sequence

15 <220>

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<212> PRT

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Asn

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<110> BJORCK, Lars

JANULCZYK, Robert

<120> STREPTOCOCCAL ABC TRANSPORTER PROTEIN

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<150> PCT/GB99/04445

<151> 1999-12-30

<150> GB 9828880.6

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20 25 30

aaa atc gat ctg cac agc att gtg cca atc ggt caa gac cct cat gag 144

Lys Ile Asp Leu His Ser Ile Val Pro Ile Gly Gln Asp Pro His Glu

35 40 45

tac gaa cca tta cca gaa gat gct gaa aaa aca agt aat gct gat gtg 192

Tyr Glu Pro Leu Pro Glu Asp Ala Glu Lys Thr Ser Asn Ala Asp Val

50 55 60

att ttc tat aat ggt atc aat cta gaa gat ggc ggg caa gct tgg ttc 240

Ile Phe Tyr Asn Gly Ile Asn Leu Glu Asp Gly Gly Gln Ala Trp Phe

65 70 75 80

acc aaa cta gtg aaa aat gct caa aaa acg aaa aac aaa gat tac ttt 288

Thr Lys Leu Val Lys Asn Ala Gln Lys Thr Lys Asn Lys Asp Tyr Phe

85 90 95

gcc gtg tct gat ggc att gat gtg att tac ttg gaa ggt gca agc gaa 336

Ala Val Ser Asp Gly Ile Asp Val Ile Tyr Leu Glu Gly Ala Ser Glu

100 105 110

aaa gga aaa gaa gat cca cat gct tgg tta aat ctc gaa aac gga atc 384

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 Pro Met Glu Thr Val Ser Lys Asp Ser Gly Ile Pro Ile Tyr Ser Glu
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 Lys Ile Asp Leu His Ser Ile Val Pro Ile Gly Gln Asp Pro His Glu
 35 40 45

 Tyr Glu Pro Leu Pro Glu Asp Ala Glu Lys Thr Ser Asn Ala Asp Val
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 Thr Lys Leu Val Lys Asn Ala Gln Lys Thr Lys Asn Lys Asp Tyr Phe
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 Ala Val Ser Asp Gly Ile Asp Val Ile Tyr Leu Glu Gly Ala Ser Glu
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tagtagcgaa ttcgtcgact ggcgcta

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<213> Artificial Sequence

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agcacaactc gagaatcgct gtgcttta

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Lys Gln Leu Ile Ala Lys Asp Pro Lys Asn Lys Glu Thr Tyr Glu Lys

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Asn

<210> 6

<211> 19

<212> PRT

<213> Streptococcus pyogenes

<400> 6

Glu Ile Asn Thr Glu Glu Glu Gly Thr Pro Asp Gln Ile Ser Ser Leu

1 5 10 15

Ile Glu Lys

<210> 7

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<213> Streptococcus pyogenes

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Glu Ser Ser Val Asp Arg Arg Pro Met Glu Thr Val Ser Lys Asp Ser

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Thr Asp Ser Ile Ala Lys Lys Gly Lys Pro Gly Asp Ser Tyr Tyr Ala

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Met Met Lys Trp Asn
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